

Report to the Legislature

Pesticide Application Safety Committee

May 2023

SSSB 5550



Office of Environmental Public Health
Sciences

Division of Environmental Public health



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Contents

- Executive Summary..... 1
- Background 2
- PASCO Meeting Report: August 10, 2022..... 3
- Report of Advisory Work Group Meetings 4
 - Advisory Work Group Meeting report: January 27,2023 5
 - Advisory Work Group Meeting report: February 15, 2023 6
 - Advisory Work Group Meeting Report: March 9, 2023..... 8
 - Advisory Work Group Meeting Report: March 17, 2023..... 9
 - Advisory Work Group Meeting Report: April 7, 2023..... 10
 - Next Advisory Work Group Meeting..... 12
- PASCO Meeting report: May 12, 2023..... 12

Executive Summary

In 2019, the Washington State Legislature passed [Substitute Senate Bill 5550 \(SSB5550\)](#), which established the Pesticide Application Safety Committee (PASCO). The committee has 11 members and two co-chairs, from the Washington State Department of Health (DOH), and the Washington State Department of Agriculture (WSDA).

The Legislature asked PASCO to develop recommendations to improve the safety of agricultural pesticide applications. We will outline these recommendations in an annual report to the Legislature through the year 2025. To support PASCO's efforts, the SSB. 5550 also set up an Advisory Work Group responsible for collecting information and making recommendations to PASCO.

Substitute Senate Bill 5550 requires DOH to submit an annual report to the Legislature by May 1 each year, documenting the committee's progress. The present report fulfills that requirement.

After a two-year hiatus due to the COVID response, PASCO reconvened for its third virtual meeting on August 10, 2022. The primary focus of this meeting was to reunite the group, receive relevant updates from state agencies, and decide on an initial path forward.

Based on recommendations from the August 2022 PASCO meeting, the Advisory Work Group reconvened virtually for their second meeting on November 21, 2022. The Work Group continued its monthly meetings through April 2023. During these sessions, members heard presentations from agency staff and other partners about current activities related to application safety, and a review of PASCO's priority areas. They discussed potential action areas and compiled key takeaways for a report to PASCO.

At PASCO's fourth meeting on date, some members attended in Olympia while others joined via Zoom. The primary goals of this gathering were to review the report from the Advisory Work Group, receive an update from the Joint Legislative Audit & Review Committee (JLARC), and discuss the new WSDA Pesticide Board HB1019.

Background

In 2019, the Washington State Legislature passed Substitute Senate Bill 5550, and the governor signed it into law, establishing the Pesticide Application Safety Committee (PASCO). The committee has 11 members. Co-chairs are the Department of Health (DOH) and the Department of Agriculture WSDA).

Committee members

- Lauren Jenks: Committee Co-Chair, Assistant Secretary, Environmental Public Health Division, DOH
- Ignacio Marquez: Committee Co-Chair, Regional Assistant to the Director - Eastern/Central WA, WSDA
- Senator Rebecca Saldaña, Senate Democrat Caucus, 37th Legislative District
- Senator Judy Warnick, Senate Republican Caucus, 13th Legislative District
- Senator Javier Valdez, Senate Democrat Caucus, 46th Legislative District
- Representative Tom Dent, House Republican Caucus, 13th Legislative District
- David Gang, Assistant Director, College of Agricultural, Human and Natural Resource Sciences, Washington State University. Left vacant as of 1/1/23.
- Gwen Hoheisel, Pesticide Safety Education Coordinator, Washington State University Cooperative Extension
- Eddie Kasner, Research Scientist and Outreach Director, University of Washington, Pacific NW Agricultural Safety and Health Center
- Craig Blackwood, Assistant Director, Department of Labor and Industries (L&I)
- Calvin Ohlson-Kiehn, Assistant Division Manager for Forest Resources, Department of Natural Resources

The Legislature asked PASCO to develop recommendations to improve the safety of pesticide application. DOH will submit an annual report detailing these recommendations to the Legislature by May 1 each year, through 2025.

The Legislature also established an Advisory Work Group to support PASCO. This work group meets periodically to gather information and propose recommendations to PASCO. Depending on PASCO's directives, the Advisory Work Group can cover a myriad of topics based on their expertise, including but not limited to:

- Exploring how state agencies and the Washington Poison Center collect and track data.
- Improving pesticide application safety for agricultural applications.
- Leading efforts to establish baseline data for the type and quantity of pesticide applications in Washington, allowing for a comparison between exposure numbers and application counts.

- Researching ways to enhance communication about pesticide application within the agricultural community, including public education in English and Spanish on acute and chronic health information about pesticides.
- Collaborating with the industry and agricultural workforce to enhance protocols and best practices, especially concerning the use of personal safety equipment for applicators and reflective gear for the general workforce.

Advisory Work Group Members

Represent organizations and stakeholder groups as specified in the legislation:

- WSDA
 - Ofelio Borges
- Employee organizations representing farmworkers
 - Elizabeth Torres, Northwest Communities' Education Center/ Radio KDNA
 - Lupe Sanchez, Opportunities Industrialization Center of Washington
- Farmworkers with expertise in pesticide application
 - Josh Gefre, Mercer Canyon Farms
 - Miguel Vargas
- Community and Migrant Health Centers
 - Maria Benavides, Yakima Valley Farm Workers Clinic
- Growers using aerial pesticide applications
 - Lynn Olsen, L J Olsen Inc
- Growers employing fumigation for pesticide application
 - Kees Weyns, Weyns Farm
- Growers using air blast sprayers
 - April Clayton, Red Apple Orchards
- Aerial applicators
 - Erin Morse, Washington Aerial Applicators
- Toxicologist
 - Matt Keifer, Internal Medicine/Occupational Medicine Specialist

This report fulfills the obligation to provide a progress update to the appropriate committees of the Legislature by May 1, 2023.

PASCO Meeting Report: August 10, 2022

The committee met virtually on August 10, 2022.

Agenda Highlights:

- Presentations on pesticide application safety by L&I, DOH, WSDA, and WSU.
- Examination of PASCO's priority areas.
- Presentation of the proposed work plan for the Advisory Work Group, addressing the three current vacancies.

- Planning for upcoming PASCO meetings.

Members Present:

Senator Saldaña, Representative Dent, Senator Valdez, Senator Warnick, Ignacio Marques, Lauren Jenks, David Gang, Edward Kasner, Gwen Hoheisel, Craig Blackwood, and Calvin Ohlson-Kiehn.

Key Discussions:

- WSDA, DOH, L&I, and WSU gave updates on their ongoing projects related to pesticide application safety.
- There was a strong emphasis on understanding the current landscape before defining priority areas. It was proposed that the Advisory Work Group should be the source of recommendations for PASCO's work priorities.
- The Advisory Work Group highlighted three vacancies: a representative from the farmworkers, a farmworker with expertise in pesticide application, and a representative for aerial pesticide applicators. Measures will be undertaken to address these vacancies.

Outcomes:

1. The Advisory Work Group is set to meet virtually in the upcoming fall.
2. PASCO directed the work group to:
 - a. Evaluate the state of pesticide application safety in the post-COVID era.
 - b. Identify achievements and areas of concern.
 - c. Develop guidance for forthcoming PASCO objectives and assignments.
3. DOH, L&I, and WSDA were directed to submit comprehensive reports on their pesticide application safety initiatives, aligning with the objectives of SSB 5550.

Report of Advisory Work Group Meetings

Following recommendations from PASCO, the Advisory Work Group reconvened November 21, 2023, for its first virtual meeting. The session largely centered on reintroducing advisory members, welcoming new participants, and discussing these agenda items:

Key Agenda Items:

- Opening statements by the PASCO Co-Chairs.
- A refresher on PASCO's establishment and objectives.
- A recap of the March 16, 2020, Advisory Work Group meeting and the August 2020 PASCO meeting.
- Deliberation on the bill's priority domains and the goals of the meeting.

Advisory Work Group Attendance:

Ignacio Marques, Lauren Jenks, Lupe Sanchez, Matt Keifer, Kees Weyns, Lynn Olsen, Erin Morse, Josh Gefre, Maria Benevides, Diana Marquez, April Clayton, Ofelio Borges, Griselda Arias

Main Outcomes:

1. **Data Collection Concerns:** The team spotlighted inconsistencies in data recording among the three agencies concerning human exposures. There is strong advocacy for an integrated data system with essential variables to correlate incidents across agencies and help to pinpoint issues related to locations, crop types, and application techniques.
2. **Safety Training Discussion:** Multiple current bilingual training initiatives were cited, including air blast calibration, agricultural supervisors' training, on-farm technical assistance, and pesticide handler training. Participants emphasized that most of these programs focus on specific roles, not giving adequate attention to the wider workforce potentially exposed to pesticides.
3. **Data Worksheet Initiative:** DOH is creating a worksheet for DOH, L&I, and WSDA to catalog the prevailing conditions, best practices, and voids in alignment with SSB 5550's emphasis on pesticide application safety.
4. **Future Engagement:** The Advisory Work Group scheduled a January session to assess the data DOH, L&I, and WSDA contributed.

Advisory Work Group Meeting report: January 27,2023

The Advisory Work Group met virtually January 27, 2023. The focus was analyzing the details DOH, L&I, and WSDA gave, and scrutinizing their alignment with set priorities. Members broke into groups, each assigned to a segment of the compiled summary worksheet from the departments. Each group highlighted priorities from the worksheet and pinpointed any reported gaps.

Advisory Work Group Attendance:

Lupe Sanchez, Matt Keifer, Kees Weyns, Lynn Olsen, Erin Morse, Josh Gefre, Diana Marquez, April Clayton, Ofelio Borges, Griselda Arias, Anneke Jansen, Mirela Iancu, Henry Peterson, Elizabeth Torres,

Objective: Assess information from DOH, L&I, and WSDA for alignment with defined priorities.

Group Summaries:

- **Group 1: Data and Best Practices**
 - **Focus:** Unified databases, foundational data collection, best practices for pesticide safety, technological incentives, and prevention strategies.
 - **Summary:** Started inter-agency meetings; recognized discrepancies in data collection; the Washington Tracking Network and a public tableau dashboard unveiled (DOH); absence of infrastructure for prevention pesticide data collection; exploration of potential technology upgrade programs; potential use

of DOH's preventive narrative for enhanced training or policy amendments; and a recommendation for L&I to intensify preemptive scheduled audits.

- **Group 2: Communication**

- **Focus:** Formulating potent community health strategies, outreaches for mitigating pesticide exposure hazards, and bolstering communication within farming communities.
- **Summary:** WSDA's ongoing efforts to revamp communication tactics; accentuating bilingual training modules for pesticide applicators, handlers, and trainers; recommendation for L&I to encompass a more extensive workforce in pesticide safety training.

- **Group 3: External Partners and Reporting**

- **Focus:** Creating non-English educational tools, enhancing access to translated pesticide labels, probing the underreporting of pesticide exposure, and devising mechanisms for retaliation-free incident reporting.
- **Summary:** Collaboration between Technical Services Education Program and other agencies for enhanced Spanish translations; ongoing endeavors towards multilingual tools; recognized lapses in reporting from major agencies; DOH spotlighted a deficit in exposure reports from the medical community.

Key Outcomes:

1. **Reestablish PIRT-like Panel:** Aimed at synergizing and scrutinizing data from the three agencies, with a spotlight on data-driven safety enhancement.
2. **Pesticide Awareness for Medical Practitioners:** DOH's initiative to liaise with Washington medical schools on current medical school education, emphasizing the urgency to amplify exposure reporting.
3. **Expanding Community Health Training:** While pesticide handlers have dedicated programs, attention is needed for individuals who might be indirectly exposed such as the everyday farmworker.
4. **Promoting a Safety-centric Ethos:** Aim to keep every worker, including non-pesticide handlers, informed about protocols and rights concerning pesticide exposure incidents. A special focus is required to understand the rapport between farm workers and management, considering the rise in H-2A employees. The H-2A temporary agricultural program establishes a means for agricultural employers who anticipate a shortage of domestic workers to bring non-immigrant foreign workers to the U.S. to perform agricultural labor or services of a temporary or seasonal nature.

Advisory Work Group Meeting report: February 15, 2023

Advisory Work Group Attendance:

Lupe Sanchez, Lynn Olsen, Josh Gefre, April Clayton, Ofelio Borges, Griselda Arias, Anneke Jansen, Mirela Iancu, Henry Peterson, Elizabeth Torres, Daniel Farber, Scott Nielsen

Presentations:

1. Daniel Farber (DOH):

- a. Showcased the Washington Tracking Networks' (WTN) pesticide data page.
- b. Gave a hands-on demonstration of the Acute Pesticide Illness Interactive Dashboard.
- c. Explained the specifics of pesticide classes, application methodologies, and target crops.
- d. Notified attendees of an impending annual report encompassing 2017-2021 data.

2. Scott Nielsen (WSDA):

- a. Offered insights into the activities of the WSDA Pesticide Compliance Unit.
- b. Highlighted recent staffing dynamics and existing vacancies.
- c. Delved into data from the legislative report for FY22, focusing on inspections.
- d. Brought attention to challenges like soil fumigant complaints and the revised penalty matrix slated for implementation in April 2023.
- e. Relayed an incident involving a Spanish-speaking farm worker's encounter with pesticides that included all three agencies involvement.

Notable Discussions:

• DOH's Segment:

- Elaboration on the significance and classification of "agricultural pesticide drift."
- The pressing need to have more granular data on the personal protective equipment (PPE) employed during exposures.
- Conversations around accidental pesticide exposures and their monitoring mechanisms.
- Anticipation surrounding the upcoming annual report's enhanced data reporting framework.

• WSDA's Segment:

- Expressions of concern over the tentative demeanor the worker displayed in Scott's shared case.
- The collaborative endeavors of WSDA and DOH to extract more information from such affected individuals.
- The hurdles WSDA encounters in starting dialogue and urging individuals to share their experiences.

Attendance and Overall Takeaways:

Delegates of DOH and WSDA, along with advisory group members participated in this meeting. The presented materials, paired with the follow-up dialogues, underlined the vital role of data

accessibility, the imperative for tailored training modules, and the persistent trials in fortifying pesticide safety and adherence within the field.

Advisory Work Group Meeting Report: March 9, 2023

Advisory Work Group Attendance:

Lupe Sanchez, Lynn Olsen, Josh Gefre, April Clayton, Ofelio Borges, Griselda Arias, Anneke Jansen, Mirela Iancu, Henry Peterson, Elizabeth Torres, Mathew Keifer, Kees Weyns, Erin Morse, Kimberly Tapia

Objective: Assess priority areas and consider prospective recommendation domains for PASCO.

Main Discussion Points:

1. Actionable Data Collection & Application:

Key Notes:

- a. Identified the urgency to transcend simple violation documentations.
- b. An appeal to DOH to decipher insights from prevention narratives, zeroing in on identifying and rectifying perilous practices.
- c. The pivot in focus from just pinpointing rule breaches to deciphering the core reasons causing exposures.

2. Medical Education & Communication:

Key Notes:

- a. Stressed the need for coherent and ongoing communication and enlightenment initiatives tailored for health care personnel.
- b. Brought to the fore the chronic issue of underreporting, particularly pertinent to pesticide-induced human poisoning cases in rural areas.
- c. Striving to bridge prevailing gaps to better public health outcomes.

3. Agricultural Leadership Training:

Key Notes:

- a. Spotlighted the burgeoning demand for rigorous safety training within the agricultural domain.
- b. Cited WSDA's current commitment: annually holding four specialized training modules, with each accommodating 30 participants for the Agricultural Leadership Program.
- c. Highlighted the collaborative venture between WSDA, the Washington State Tree Fruit Association and the collaboration of the Pacific Northwest Agricultural Safety and Health Center (PNASH), aiming to assess the lasting effects of these training sessions.

4. Evolving Agricultural Workforce:

Key Notes:

- a. Discussed the notable surge in H-2A worker numbers over the preceding five-year period.
- b. Flagged potential outreach lapses, attributing them to the dynamic shifts in the workforce's composition.
- c. Recommended enhanced inter-agency and inter-company collaborations, particularly those hiring H-2A workers, ensuring streamlined and effective pesticide safety communications.

Concluding Remarks:

The group emphasized how important it is to figure out the main reasons people are exposed to pesticides. The conversation also pointed out the urgent need to improve health education in rural areas, expand safety training efforts, and adapt to changes in the farming workforce.

Advisory Work Group Meeting Report: March 17, 2023

Advisory Work Group Attendance:

Lupe Sanchez, Lynn Olsen, Josh Gefre, April Clayton, Ofelio Borges, Griselda Arias, Anneke Jansen, Mirela Iancu, Elizabeth Torres, Itzy Hernandez, Jessica Jang

Guest Speakers: Representatives from WSU and UW. Speakers were Rachel Bomberger (WSU), Gwen Hoheisel (WSU), Eddie Kasner (UW), and Pablo Palmandez (UW).

Presentations:**1. WSU's Pesticide Resources and Education Program - Presented by Rachel Bomberger****Key Highlights:**

- a. Committed to equipping stakeholders with tools, services, and information for the judicious and safe deployment of pesticides.
- b. Provides a spectrum of training modalities, including digital platforms and in-person sessions, along with facilitating research, technical backing, and regulatory counsel.

2. WSU Application Technology Research and Extension Group - Presented by Gwen Hoheisel**Key Highlights:**

- a. Mainstay emphasis on various crops: fruits, rows, and vegetables, augmented by robust industry collaborations.
- b. Key role in analyzing spray apparatus tailored for integrated pest management blueprints.

- c. Pioneering advancements such as thermal oil sprayers, ultraviolet-C systems, unmanned aerial vehicles, and precision spraying tech.
 - d. Disseminating knowledge through structured classes, hands-on workshops, and digital resources.
 - e. Operational challenges encompass the sporadic nature of grant fundings and hurdles in the successful commercial launch of tech innovations.
3. **PNASH's PestiSeguro™/PestiSafe™ App and Service - Presented by Pablo Palmandez**

Key Highlights:

- a. A digital tool conceived to amplify the safety of agricultural workers.
- b. Key features span anytime, anywhere access, user-friendly interface, and easy navigation.
- c. Direct access to pesticide labels approved for use in Washington and links to pesticide safety and worker protection standards resources in Spanish and English.

Summary: The meeting offered a deep dive into the contemporary landscapes of pesticide-related research, the evolution of application technologies, safety norms, and synergies formed between academia and industrial allies. The resonating message pivoted around combining safety norms, technological strides, and efficient educational methodologies, all aimed at sculpting a safe and progressive agricultural environment.

Advisory Work Group Meeting Report: April 7, 2023

Advisory Work Group Attendance:

Lynn Olsen, April Clayton, Ofelio Borges, Griselda Arias, Anneke Jansen, Mirela Iancu, Elizabeth Torres, Itzy Hernandez, Mathew Keifer, Kees Weyns, Kimberly Tapia

Objective: The primary goal was to scrutinize priority areas, explore their role in minimizing pesticide exposures among the agricultural workforce, pinpoint gaps in prevailing understandings or practices, and craft further recommendations.

Key Highlights:

1. PIRT Panel Review (2018) for Advisory Work Group to PASCO:

a. Accomplishments:

- i. Effective inter-agency synergy and a consolidated consensus on data points.
- ii. A public avenue was set up for transparency in pesticide-related matters.

b. Challenges:

- i. An unbalanced emphasis on recompense claims, sidelining in-depth inquiries.
- ii. Ambiguous foundation statutes.

c. Recommendations:

- i. Outline explicit panel expectations.
- ii. Financial allocation for specialized staffing.
- iii. Include agency roles central to community education and training.

2. H-2A Workforce Licensing and Outreach:

- a. Involvement of the Agricultural and Seasonal Workforce Services Advisory Committee (ASWS) at the Employment Security Department (ESD): Manages H-2A workforce licensing and public engagement with seven dedicated outreach staff across the state.
- b. 2022 Coverage: About 25,000 H-2A workers in WA state.
- c. Outreach Themes: Clarity on contract particulars, grievance redress mechanisms, and perks for employees.
- d. Possible partnership to include pesticide information in their already existing outreach.

Priority Areas Explored:

- **Reporting Pesticide Exposure:**
 - a. Challenges: Untangling the causes behind under-reported pesticide exposures.
 - b. Recommendation: Explore new reporting techniques, outreach campaign efforts to increase awareness of reporting.
 - c. Identified Gaps: Medical outreach and education significantly lacking.
- **Agricultural Workforce Instruction:**
 - a. Recommendation: Continue and expand instructional content in diversified languages.
 - b. Primary Focus: Prioritizing the safety protocols during pesticide application.
 - c. Present Scenario: Many training programs are in place centered around the applicators and handlers illustrating a lack of workforce training focused on pesticide safety for fieldworkers.
- **Data Collection and Monitoring:**
 - a. Discussion area: Inter-departmental dialogue on data collection and surveillance.
 - b. Identified Gaps: Communication bottlenecks between WSDA, LNI, and DOH.
 - c. Upcoming Plans: Qualitative analysis of DOH prevention narratives.

Discussion:

- Main Topics: Ways to look into issues, gathering and using data, teamwork based on what the data tells us, understanding why violations happen, and the importance of encouragement during training.
- Key Focuses: Figuring out the main causes of accidents, required medical records, and having a single system for reporting.
- Common Agreement: Everyone agreed on the need for better teamwork between agencies and how crucial data is for shaping training content and methods.

Closing Thoughts: The meeting helped us better understand the current situation and showed us different areas we could recommend to improve safety and education for farmworkers.

Next Advisory Work Group Meeting

TBA

PASCO Meeting report: May 12, 2023

The committee met in person and virtually on May 12, 2023.

Agenda Highlights:

- Update from the Joint Legislative Audit & Review Committee (JLARC).
- Update on WSDA Pesticide Board HB1019.
- Report out and discussions from the Advisory Work Group meetings

Members Present:

Senator Saldaña, Representative Dent, Ignacio Marques, Lauren Jenks, Edward Kasner, Gwen Hoheisel, Craig Blackwood, and Calvin Ohlson-Kiehn.

Key Discussions:

- The Joint Legislative Audit and Review Committee (JLARC) is a bipartisan group that conducts performance audits on government programs.
 - Key focus areas include studies on farmworker needs, like H-2A visa administration, pesticide safety, and wage and worker safety laws.
 - DOH, WSDA, and L&I handle pesticide safety and are being evaluated for compliance and coordination by the JLARC auditors.
 - Reports on these studies are expected in January (preliminary) and April (final of 2024)
- HB1019- sponsored by Rep. Dent, re-established the Pesticide Advisory Board. It will advise WSDA on pesticide matters.
 - 13 voting members and 19 nonvoting members, representing various interests.
 - WSDA will start the process of asking for possible board members. We expect the first meeting to occur in November 2023.
- Vacant PASCO seat: At present there is a vacant WSU seat. WSU would like Gwen to fill both spots or bring in a colleague. There was a short discussion about filling this seat or allowing it to remain vacant.

- To identify actionable steps, the Advisory Work Group systematically collected data from various agencies and partners and evaluated priority areas outlined in the PASCO bill. It will report key findings to PASCO.
 - The advisory group found gaps and opportunities in current practices, specifically in how data is used for prevention. The existing data tends to focus on the number of incidents rather than providing a comprehensive view of each case. The group suggests that discussing the full context of each case could lead to more effective prevention strategies. A formal review process should channel information to the right stakeholders, including trainers and policymakers. The group also emphasized that routine inspections offer valuable data for prevention and suggested an analysis of existing prevention data to refine future efforts.
 - Noted two significant gaps: insufficient reporting from the medical community and limited training outreach to the broader agricultural workforce and nearby communities. They emphasized the need for more robust outreach to health care providers in rural areas to capture essential data. While training efforts for certified handlers are strong, there's less focus on educating the entire community, including those living near agricultural fields. The group praised initiatives like the Agricultural Leadership Program from WSDA and Washington State Tree Fruit Association, which aim to improve workplace safety starting with leadership.

Outcomes:

1. After the WSDA board presentation, there was discussion around how its role differs from the Pesticide Application Safety Committee (PASCO). Questions around potential collaboration between the two groups. With PASCO set to end in July 2025, will the WSDA board take over PASCO as its function? We asked to learn more about the WSDA board's scope at our next meeting.
2. There was a brief discussion following the Advisory Work Group report out.
 - a. Medical Community: Currently, we're not getting reports of suspected pesticide-related illnesses from health care providers. One option could be extracting this data from electronic medical records using diagnostic codes. However, the use of these codes by providers varies, which could make data retrieval challenging. DOH could investigate this further.
 - b. Quality of Data: The focus should be on comprehensive investigative reports that cover the entire scenario, rather than just counting incidents. We still lack data on pesticide usage, which could be valuable for targeting educational and training programs based on what growers actually use in Washington state.

- c. **New Technologies:** A noticeable gap exists in understanding the role that new technologies can play in improving the safety of pesticide applications, as well as the mixing and loading processes.
 - d. **Focus on Leadership:** Adding leadership training, like the Agricultural Leadership Program, to current practices and emerging technologies can help create a culture of safety. This could significantly improve the work environment for Washington's agricultural workforce.
- 3. **Public Comment:** Brandy Williams, an epidemiologist with the Benton-Franklin Health District, plans to update their Ag newsletter to include pesticide safety information. She is open to partnerships that could improve the newsletter's value to its readers.
- 4. A future area of focus is the effect of climate change on pesticide application safety. Changes in temperature could lead to more applications happening in the dark, and during hot conditions that increase the risk of vapor drift. These changes make it challenging to ensure that exclusion zones are clear of people.